a ground data link unit positioned within the aircraft and operatively connected to said plurality of sensors for receiving said engine data, said ground data link unit comprising:

a) an archival data store operative to accumulate and store flight performance data and engine data during at least initial take-off during flight of the aircraft, and

b) a widespread spread spectrum transceiver coupled to said archival data store, and comprising a transmitter that is operative after the aircraft completes its flight and lands at an airport to download said flight performance data that has been accumulated and stored by said archival data store during flight over a wideband spread spectrum communication signal, wherein said spread spectrum transceiver also receives said engine data and is operative to download said engine data upon initial take-off over a wideband spread spectrum communication signal; [and]

an airport based spread spectrum receiver for receiving the wideband spread spectrum communication signal from the aircraft upon initial take-off and demodulating the wideband spread spectrum communication signal to obtain the engine data; and

a ground based server connected to said airport based spread spectrum receiver for receiving said engine data and further processing said engine data.

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8. (ONCE AMENDED) A system according to Claim 1, [and further comprising] wherein said ground based server comprises an airport based server connected to said airport

72

based spread spectrum receiver for receiving said engine data for further processing of said engine data.

9. (ONCE AMENDED) A system according to Claim 1, and further comprising a remote flight operations center operatively coupled to said [airport] ground based [spread spectrum receiver] server for receiving and processing engine data downloaded from said aircraft.

15 16. (ONCE AMENDED) A system for providing a record of the flight performance of an aircraft and engine data comprising:

a plurality of sensors positioned on the aircraft for sensing engine conditions and generating engine data relating to operation of the engine during at least initial take-off;

a ground data link unit operatively connected to said plurality of sensors for receiving said engine data, said ground data link unit comprising:

a central processing unit that receives said engine data and processes said engine data to determine engine event problems, and

a spread spectrum transceiver having a transmitter that receives said processed engine data from said central processing unit and is operative to download said engine data upon initial take-off over a wideband spread spectrum communication signal; [and]

an airport based spread spectrum receiver that receives the wideband spread spectrum communication signal from the aircraft upon initial take-off and demodulates the

73

signal to obtain the engine data for forwarding and further processing; and

a ground based server connected to said airport based spread spectrum receiver for receiving said engine data and further processing said engine data.

17. (ONCE AMENDED) A system according to Claim 15, wherein said ground data link unit further comprises an archival data store for accumulating and storing flight performance data generated during flight of said aircraft.

19. (ONCE AMENDED) A system according to Claim 17, and further comprising a plurality of sensors located throughout the aircraft and operatively connected to said archival data store for sensing routine aircraft conditions such as received by a flight data recorder representative of the aircraft flight performance during flight of said aircraft and generating parametric data to said archival data store.

21. (ONCE AMENDED) A system according to Claim 17, wherein said archival data store is operative to store engine data.

25. (ONCE AMENDED) A system according to Claim 15, [and further comprising] wherein said ground based server comprises an airport based server connected to said airport based spread spectrum receiver for receiving said engine data for further processing of said engine data.

26. (ONCE AMENDED) A system according to Claim 15, and further comprising a remote flight operations center operatively coupled to said [airport] ground based [spread

spectrum receiver] server for receiving and processing engine data downloaded from said aircraft.

30 ~~31~~. (ONCE AMENDED) A method of providing a record of the flight performance of an aircraft and engine data comprising:

collecting engine data within a ground data link unit during initial take-off of an aircraft from an airport;

processing the engine data within a central processing unit of the ground data link unit to determine engine problems;

upon initial take-off, downloading the engine data that has been collected during initial take-off over a wideband spread spectrum communication signal to an airport based spread spectrum receiver; [and]

demodulating within the airport based spread spectrum receiver the wideband spread spectrum communication signal to obtain the engine data for further processing; and

forwarding the engine data to a[n airport] ground based server connected to the airport based spread spectrum receiver and processing the engine data within the [airport] ground based server.

34 ~~36~~. (ONCE AMENDED) A method of providing a record of the flight performance of an aircraft and engine data comprising:

collecting engine data within a ground data link unit during initial take-off of an aircraft from an airport;

upon initial take-off, downloading the engine data that has been collected during initial take-off over a wideband spread spectrum communication signal to an airport based spread spectrum receiver;

75

demodulating within the airport based spread spectrum receiver the spread spectrum communication signal to obtain the engine data;

forwarding the demodulated data to a ground based server for further processing;

collecting data within the ground data link unit on the flight performance of the aircraft during flight of the aircraft;

accumulating and storing within an archival data store of the ground data link unit the flight performance data;

after the aircraft lands at an airport at completion of the flight, downloading the flight performance data that has been accumulated and stored during the flight over a wideband spread spectrum communication signal to an airport based spread spectrum receiver; and

demodulating within the receiver the received spread spectrum signal to obtain the flight performance data.

REMARKS

Applicants thank Examiner Crosland for the detailed study of the application and cited prior art. Applicants have amended the claims and submit that the claims as amended are in condition for allowance.

As set forth in the amended claims, the present invention is directed to a system and method for providing a record of the flight performance of an aircraft and engine data. A plurality of sensors sense engine conditions on the aircraft and generate engine data relating to the operation of the engine during at least initial take-off. A ground data link unit is positioned within the aircraft and operatively

76